

- f. Shallow/Deep Water Discharge.** Discharge from the Millbrae WPCP to Lower San Francisco Bay is viewed as a deep water discharge, which is defined by the Basin Plan as a discharge through a diffuser that receives a minimum initial dilution of 10 to 1. Pursuant to the Basin Plan, WQBELs established by this Order (except those for bioaccumulative pollutants and the non-persistent pollutant ammonia) are therefore based on an initial dilution of 10 to 1.
- g. Site-Specific Metals Translators.** Because NPDES regulations at 40 CFR 122.45(c) require that effluent limitations for metals be expressed as total recoverable metal, and applicable WQC for metals are typically expressed as dissolved metal, factors or translators must be used to convert metals concentrations from dissolved to total recoverable and vice versa. In the CTR, USEPA establishes default translators that are used in NPDES permitting activities; however, site-specific conditions such as water temperature, pH, suspended solids, and organic carbon greatly impact the form of metal (dissolved, filterable, or otherwise) that is present in the water and therefore available to cause toxicity. In general, the dissolved form of the metals is more available and more toxic to aquatic life than filterable forms. Site-specific translators can be developed to account for site-specific conditions, thereby preventing exceedingly stringent or underprotective WQOs.

For deep water discharges to South San Francisco Bay, the Regional Water Board used the following translators for copper and nickel, based on recommendations of the Clean Estuary Partnership's *North of Dumbarton Bridge Copper and Nickel Development and Selection of Final Translators* (2005). In determining the need for and calculating WQBELs for all other metals, the Regional Water Board staff used default translators established by the USEPA in the CTR at 40 CFR 131.38(b)(2), Table 2.

**Table F-9. Translators for Copper and Nickel for Deepwater Discharges of North of Dumbarton Bridge**

CU and Ni Translators for Deepwater Discharges to Lower San Francisco Bay	Copper		Nickel	
	AMEL Translator	MDEL Translator	AMEL Translator	MDEL Translator
	0.74	0.88	0.65	0.85

### 3. Determining the Need for WQBELs

NPDES regulations at 40 CFR 122.44 (d)(1)(i) require permits to include WQBELs for all pollutants (non-priority and priority) "which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any narrative or numeric criteria within a State water quality standard." Thus, assessing whether a pollutant has "Reasonable Potential" is the fundamental step in determining whether or not a WQBEL is required. For non-priority pollutants, Regional Water Board staff used available monitoring data, the receiving water's designated beneficial uses, and/or previous permit pollutant limitations to determine Reasonable Potential. For priority pollutants, Regional Water Board staff used the methods prescribed in Section 1.3 of the SIP to determine if the discharge from the Millbrae WPCP demonstrates Reasonable Potential as described below in sections 3.a – 3.e.

**a. Reasonable Potential Analysis**

Using the methods prescribed in Section 1.3 of the SIP, Regional Water Board staff analyzed the effluent data to determine if the discharge from the Millbrae WPCP demonstrates Reasonable Potential. The RPA compares the effluent data with numeric and narrative WQOs in the Basin Plan and numeric WQC established by the USEPA in the NTR and CTR.

**b. Reasonable Potential Methodology**

Using the methods and procedures prescribed in Section 1.3 of the SIP, Regional Water Board staff analyzed the effluent and background data and the nature of Millbrae WPCP operations to determine if the discharge has Reasonable Potential to cause or contribute to exceedances of applicable Site-Specific Objectives or WQC.

The RPA projects a maximum effluent concentration (MEC) for each pollutant based on existing data, while accounting for a limited data set and effluent variability. There are three triggers in determining Reasonable Potential.

- (1) The first trigger is activated if the MEC is greater than or equal to the lowest applicable WQO ( $MEC \geq WQO$ ), which has been adjusted, if appropriate, for pH, hardness, and translator data. If the MEC is greater than or equal to the adjusted WQO, then that pollutant has Reasonable Potential, and a WQBEL is required.
- (2) The second trigger is activated if the observed maximum ambient background concentration (B) is greater than the adjusted WQO ( $B > WQO$ ), and the pollutant is detected in any of the effluent samples ( $MEC > ND$ ).
- (3) The third trigger is activated if a review of other information determines that a WQBEL is required to protect beneficial uses, even though both MEC and B are less than the WQO/WQC. A limitation may be required under certain circumstances to protect beneficial uses.

**c. Effluent Data**

The Regional Water Board's August 6, 2001, letter titled *Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy* (August 6, 2001 Letter – available online; see Standard Language and Other References Available Online, below) to all permittees, formally required the Discharger (pursuant to Section 13267 of the CWC) to initiate or continue monitoring for the priority pollutants using analytical methods that provide the best detection limits reasonably feasible. Regional Water Board staff analyzed this effluent data and the nature of the Millbrae WPCP to determine if the discharge has Reasonable Potential. The RPA was based on the effluent monitoring data collected by the Discharger from February 2004 through January 2007 for most inorganic pollutants, and from June 2002 through November 2006 for most organic pollutants.

**d. Ambient Background Data**

Ambient background values are used in the RPA and in the calculation of effluent limitations. For the RPA, ambient background concentrations are the observed maximum detected water column concentrations. The SIP states that for calculating WQBELs, ambient background concentrations are either the observed maximum ambient water column concentrations or, for criteria/objectives intended to protect human health from carcinogenic effects, the arithmetic mean of observed ambient water concentrations. The RMP station at Yerba Buena Island, located in the Central Bay, has been monitored for most of the inorganic (CTR constituent numbers 1–15) and some of the organic (CTR constituent numbers 16–126) toxic pollutants, and these RMP data were used as background data in performing the RPA for this Discharger.

Not all the constituents listed in the CTR have been analyzed by the RMP. These data gaps are addressed by the August 6, 2001, Letter. The August 6, 2001, Letter formally requires Dischargers (pursuant to CWC Section 13267) to conduct ambient background monitoring and effluent monitoring for those constituents not currently monitored by the RMP, and to provide this technical information to the Regional Water Board.

On May 15, 2003, a group of several San Francisco Bay Region dischargers (known as the Bay Area Clean Water Agencies, or BACWA) submitted a collaborative receiving water study, entitled the *San Francisco Bay Ambient Water Monitoring Interim Report* (2003). This study includes monitoring results from sampling events in 2002 and 2003 for the remaining priority pollutants not monitored by the RMP. The RPA was conducted and the WQBELs were calculated using RMP data from 1993 through 2003 for inorganics and organics at the Yerba Buena Island RMP station, and additional data from BACWA's *Ambient Water Monitoring: Final CTR Sampling Update* (2004) for the Yerba Buena Island RMP station. The Dischargers may use this study to fulfill all requirements of the August 6, 2001 Letter for receiving water monitoring.

**e. RPA Determination**

The MECs, most stringent applicable WQOs/WQC, and background concentrations used in the RPA are presented in the following table, along with the RPA results (yes or no) for each pollutant analyzed. Reasonable Potential was not determined for all pollutants, as there are not applicable WQOs/WQC for all pollutants, and monitoring data are not available for others. RPA results are shown below. Based on a review of the effluent data collected during the previous permit term, the pollutants that exhibit Reasonable Potential are copper, mercury, cyanide, dioxin-TEQ, and ammonia.

**Table F-10. Summary of RPA Results**

CTR #	Priority Pollutants	MEC or Minimum DL <sup>[a][b]</sup> (µg/L)	Governing WQO/WQC (µg/L)	Maximum Background or Minimum DL <sup>[a][b]</sup> (µg/L)	RPA Results <sup>[c]</sup>
1	Antimony	0.5	4300	1.8	No
2	Arsenic	1.8	36	2.46	No
3	Beryllium	0.1	No Criteria	0.215	Ud
4	Cadmium	0.13	9.4	0.13	No
5a	Chromium (III)	1	No Criteria	Not Available	No
5b	Chromium (VI)	1.4	50	4.4	Ud

CTR #	Priority Pollutants	MEC or Minimum DL <sup>[a][b]</sup> (µg/L)	Governing WQO/WQC (µg/L)	Maximum Background or Minimum DL <sup>[a][b]</sup> (µg/L)	RPA Results <sup>[c]</sup>
6	Copper	13	4.2	2.55	Yes
7	Lead	0.58	8.5	0.80	No
8	Mercury (303d listed) <sup>[d]</sup>	0.028	0.025	0.0086	Yes
9	Nickel	6.5	13	3.7	No
10	Selenium	3	5.0	0.39	No
11	Silver	1	2.2	0.052	No
12	Thallium	0.1	6.3	0.21	No
13	Zinc	27	86	5.1	No
14	Cyanide	17	2.9	< 0.4	Yes
15	Asbestos	Not Available	No Criteria	Not Available	Ud
16	2,3,7,8-TCDD (303d listed)	< 3.1E-07	1.4E-08	Not Available	No
	Dioxin TEQ (303d listed)	8.3E-07	1.4E-08	7.10E-08	Yes
17	Acrolein	< 0.5	780	< 0.5	No
18	Acrylonitrile	< 0.33	0.66	0.03	No
19	Benzene	< 0.03	71	< 0.05	No
20	Bromoform	< 0.03	360	< 0.5	No
21	Carbon Tetrachloride	< 0.04	4.4	0.06	No
22	Chlorobenzene	< 0.03	21000	< 0.5	No
23	Chlorodibromomethane	0.2	34	< 0.05	No
24	Chloroethane	< 0.03	No Criteria	< 0.5	Ud
25	2-Chloroethylvinyl ether	< 0.1	No Criteria	< 0.5	Ud
26	Chloroform	4.8	No Criteria	< 0.5	Ud
27	Dichlorobromomethane	0.6	46	< 0.05	No
28	1,1-Dichloroethane	< 0.04	No Criteria	< 0.05	Ud
29	1,2-Dichloroethane	< 0.04	99	0.04	No
30	1,1-Dichloroethylene	< 0.06	3.2	< 0.5	No
31	1,2-Dichloropropane	< 0.03	39	< 0.05	No
32	1,3-Dichloropropylene	< 0.03	1700	Not Available	No
33	Ethylbenzene	< 0.04	29000	< 0.5	No
34	Methyl Bromide	< 0.05	4000	< 0.5	No
35	Methyl Chloride	< 0.04	No Criteria	< 0.5	Ud
36	Methylene Chloride	1	1600	0.5	No
37	1,1,2,2-Tetrachloroethane	< 0.04	11	< 0.05	No
38	Tetrachloroethylene	1.2	8.85	< 0.05	No
39	Toluene	1	200000	< 0.3	No
40	1,2-Trans-Dichloroethylene	< 0.05	140000	< 0.5	No
41	1,1,1-Trichloroethane	< 0.03	No Criteria	< 0.5	Ud
42	1,1,2-Trichloroethane	< 0.05	42	< 0.05	No
43	Trichloroethylene	< 0.05	81	< 0.5	No
44	Vinyl Chloride	< 0.05	525	< 0.5	No
45	2-Chlorophenol	< 0.6	400	< 1.2	No
46	2,4-Dichlorophenol	< 0.7	790	< 1.3	No
47	2,4-Dimethylphenol	< 0.9	2300	< 1.3	No
48	2-Methyl- 4,6-Dinitrophenol	< 0.9	765	< 1.2	No
49	2,4-Dinitrophenol	< 0.6	14000	< 0.7	No
50	2-Nitrophenol	< 0.7	No Criteria	< 1.3	Ud
51	4-Nitrophenol	< 0.6	No Criteria	< 1.6	Ud
52	3-Methyl 4-Chlorophenol	< 0.5	No Criteria	< 1.1	Ud
53	Pentachlorophenol	< 0.9	7.9	< 1.0	No
54	Phenol	< 0.4	4600000	< 1.3	No
55	2,4,6-Trichlorophenol	< 0.6	6.5	< 1.3	No
56	Acenaphthene	< 0.029	2700	0.0015	No
57	Acenaphthylene	< 0.019	No Criteria	0.00053	Ud

CTR #	Priority Pollutants	MEC or Minimum DL <sup>[a][b]</sup> (µg/L)	Governing WQO/WQC (µg/L)	Maximum Background or Minimum DL <sup>[a][b]</sup> (µg/L)	RPA Results <sup>[c]</sup>
58	Anthracene	< 0.029	110000	0.0005	No
59	Benzidine	< 0.97	0.00054	< 0.0015	No
60	Benzo(a)Anthracene	< 0.019	0.049	0.0053	No
61	Benzo(a)Pyrene	< 0.019	0.049	0.00029	No
62	Benzo(b)Fluoranthene	< 0.02	0.049	0.0046	No
63	Benzo(ghi)Perylene	< 0.02	No Criteria	0.0027	Ud
64	Benzo(k)Fluoranthene	< 0.02	0.049	0.0015	No
65	Bis(2-Chloroethoxy)Methane	< 0.7	No Criteria	< 0.3	Ud
66	Bis(2-Chloroethyl)Ether	< 0.68	1.4	< 0.3	No
67	Bis(2-Chloroisopropyl)Ether	< 0.6	170000	Not Available	No
68	Bis(2-Ethylhexyl)Phthalate	3.1	5.9	< 0.5	No
69	4-Bromophenyl Phenyl Ether	< 0.4	No Criteria	< 0.23	Ud
70	Butylbenzyl Phthalate	< 0.8	5200	< 0.52	No
71	2-Chloronaphthalene	< 0.5	4300	< 0.3	No
72	4-Chlorophenyl Phenyl Ether	< 0.5	No Criteria	< 0.3	Ud
73	Chrysene	< 0.02	0.049	0.0024	No
74	Dibenzo(a,h)Anthracene	< 0.029	0.049	0.00064	No
75	1,2-Dichlorobenzene	< 0.05	17000	< 0.8	No
76	1,3-Dichlorobenzene	< 0.07	2600	< 0.8	No
77	1,4-Dichlorobenzene	1.4	2600	< 0.8	No
78	3,3 Dichlorobenzidine	< 0.3	0.077	< 0.001	No
79	Diethyl Phthalate	< 0.7	120000	< 0.24	No
80	Dimethyl Phthalate	< 0.58	2900000	< 0.24	No
81	Di-n-Butyl Phthalate	< 0.58	12000	< 0.5	No
82	2,4-Dinitrotoluene	< 0.6	9.1	< 0.27	No
83	2,6-Dinitrotoluene	< 0.49	No Criteria	< 0.29	No
84	Di-n-Octyl Phthalate	< 0.68	No Criteria	< 0.38	No
85	1,2-Diphenylhydrazine	< 0.6	0.54	0.0037	No
86	Fluoranthene	< 0.029	370	0.011	No
87	Fluorene	< 0.02	14000	0.00208	No
88	Hexachlorobenzene	< 0.4	0.00077	0.0000202	No
89	Hexachlorobutadiene	< 0.7	50	< 0.3	No
90	Hexachlorocyclopentadiene	< 0.4	17000	< 0.31	No
91	Hexachloroethane	< 0.6	8.9	< 0.2	No
92	Indeno(1,2,3-cd)Pyrene	< 0.02	0.049	0.004	No
93	Isophorone	< 0.49	600	< 0.3	No
94	Naphthalene	< 0.019	No Criteria	0.0023	Ud
95	Nitrobenzene	< 0.68	1900	< 0.25	No
96	N-Nitrosodimethylamine	< 0.58	8.1	< 0.3	No
97	N-Nitrosodi-n-Propylamine	< 0.78	1.4	< 0.001	No
98	N-Nitrosodiphenylamine	< 0.58	16	< 0.001	No
99	Phenanthrene	< 0.02	No Criteria	0.0061	Ud
100	Pyrene	< 0.02	11000	0.0051	No
101	1,2,4-Trichlorobenzene	< 0.6	No Criteria	< 0.3	Ud
102	Aldrin	< 0.002	0.00014	Not Available	No
103	Alpha-BHC	< 0.0029	0.013	0.000496	No
104	beta-BHC	< 0.0029	0.046	0.000413	No
105	gamma-BHC	< 0.0029	0.063	0.0007034	No
106	delta-BHC	< 0.002	No Criteria	0.000042	Ud
107	Chlordane (303d listed)	< 0.005	0.00059	0.00018	No
108	4,4'-DDT (303d listed)	< 0.0029	0.00059	0.000066	No
109	4,4'-DDE (linked to DDT)	< 0.002	0.00059	0.000693	No
110	4,4'-DDD	< 0.0019	0.00084	0.000313	No

CTR #	Priority Pollutants	MEC or Minimum DL <sup>[a][b]</sup> (µg/L)	Governing WQO/WQC (µg/L)	Maximum Background or Minimum DL <sup>[a][b]</sup> (µg/L)	RPA Results <sup>[c]</sup>
111	Dieldrin (303d listed)	< 0.0019	0.00014	0.000264	No
112	Alpha-Endosulfan	< 0.0019	0.0087	0.000031	No
113	beta-Endosulfan	< 0.0019	0.0087	0.000069	No
114	Endosulfan Sulfate	< 0.002	240	0.0000819	No
115	Endrin	< 0.0019	0.0023	0.000036	No
116	Endrin Aldehyde	< 0.002	0.81	Not Available	No
117	Heptachlor	< 0.0029	0.00021	0.000019	No
118	Heptachlor Epoxide	< 0.0019	0.00011	0.00002458	No
119-125	PCBs sum (303d listed)	< 0.029	0.00017	Not Available	No
126	Toxaphene	< 0.14	0.0002	Not Available	No
	Tributyltin	< 0.0016	0.0074	< 0.001	No
	Total PAHs	Not Available	15	0.26	Ud
	Ammonia <sup>[e]</sup>	59,000	1505	100	Yes

- [a] The Maximum Effluent Concentration (MEC) and maximum background concentration are the actual detected concentrations unless preceded by a "<" sign, in which case the value shown is the minimum detection level (DL).
- [b] The MEC or maximum background concentration is "Not Available" when there are no monitoring data for the constituent.
- [c] RPA Results = Yes, if MEC > WQO/WQC, B > WQO/WQC and MEC is detected, or Trigger 3;  
= No, if MEC and B are < WQO/WQC or all effluent data are undetected;  
= Undetermined (Ud), if no criteria have been promulgated or there are insufficient data.
- [d] Effluent limitations for Mercury are established by Regional Water Board Order R2-2007-0077 (*Waste Discharge Requirements For Municipal And Industrial Wastewater, Discharges of Mercury To San Francisco Bay NPDES No. CA0038849*).
- [e] See section IV.C.4.d.5 of this Order for an explanation of the WQOs for ammonia.

**(1) Constituents with limited data.** The Discharger has performed sampling and analysis for the constituents listed in the CTR. This data set was used to perform the RPA. In some cases, Reasonable Potential cannot be determined because effluent data are limited, or ambient background concentrations are not available. The Discharger will continue to monitor for these constituents in the effluent using analytical methods that provide the best feasible detection limits. When additional data become available, further RPA will be conducted to determine whether to add numeric effluent limitations to this Order or to continue monitoring.

**(2) Pollutants with no Reasonable Potential.** WQBELs are not included in this Order for constituents that do not demonstrate Reasonable Potential; however, monitoring for those pollutants is still required. If concentrations of these constituents are found to have increased significantly, the Discharger is required to investigate the source(s) of the increase(s) (see provision VI.C.2.a of this Order). Remedial measures are required if the increases pose a threat to water quality in the receiving water.

Order No. 01-143 included final WQBELs for lead, nickel, zinc, 4,4-DDE, and dieldrin; however, because the current RPA showed that discharges from the Millbrae WPCP no longer demonstrate Reasonable Potential for lead, nickel, zinc, 4,4-DDE, and dieldrin, the effluent limitations for these pollutants from Order No. 01-143 are not retained. This is consistent with State Water Board Order WQ 2001-16.

#### 4. WQBEL Calculations.

##### a. Pollutants with Reasonable Potential

WQBELs were developed for the toxic and priority pollutants that were determined to have reasonable potential to cause or contribute to exceedances of the WQOs or WQC. The WQBELs were calculated based on appropriate WQOs/WQC and the appropriate procedures specified in Section 1.4 of the SIP. The WQOs or WQC used for each pollutant with Reasonable Potential are discussed below.

##### b. Dilution Credit

The SIP provides the basis for a dilution credit. The NBSU outfall is designed to achieve a minimum initial dilution of 10:1. Based on review of RMP monitoring data for San Francisco Bay, there is variability in the receiving water, and the hydrology of the receiving water is complex. Therefore, there is uncertainty regarding the representative nature of ambient background data, which is used for determination of effluent limitations. Pursuant to section 1.4.2.1 of the SIP, "dilution credit may be limited or denied on a pollutant-by-pollutant basis...." The Regional Water Board has determined that a conservative 10:1 dilution credit for non-bioaccumulative priority pollutants and a zero dilution credit for bioaccumulative pollutants are necessary for protection of beneficial uses. The detailed basis for each are explained below.

- (1) For certain bioaccumulative pollutants, dilution credit is not included in calculating the final WQBELs. This determination is based on available data on concentrations of these pollutants in aquatic organisms, sediment, and the water column. The Clean Water Act 303(d) list was updated and approved by the Regional Water Board on October 25, 2006. For Lower San Francisco Bay, the Regional Water Board placed mercury and polychlorinated biphenyls (PCBs) on the 303(d) list. The USEPA added dioxin and furan compounds, chlordane, dieldrin, and 4,4'-DDT to the 303(d) list. The reasoning for these decisions is based on the following factors that suggest there is no more assimilative capacity in San Francisco Bay for these pollutants.

Samples of tissue taken from fish in San Francisco Bay show the presence of these pollutants at concentrations greater than screening levels (*Contaminant Concentrations in Fish from San Francisco Bay*, May 1997). The Office of Environmental Health and Hazard Assessment (OEHHA) also completed a preliminary review of data in the 1994 San Francisco Bay pilot study, *Contaminated Levels in Fish Tissue from San Francisco Bay*. The results of the study also showed elevated levels of chemical contaminants in fish tissues. In December 1994, OEHHA subsequently issued an interim consumption advisory covering certain fish species in San Francisco Bay. This advisory is still in effect for exposure to sport fish that are found to be contaminated with mercury, dioxins, and pesticides (e.g., DDT).

- (2) For non-bioaccumulative constituents (except ammonia), a conservative allowance of 10:1 dilution for discharges to San Francisco Bay has been assigned for protection of beneficial uses. The 10:1 dilution allowance was granted in Order No. 01-143 and is also based on the Basin Plan's Prohibition Number 1, which prohibits discharges with

less than 10:1 dilution. Limiting the dilution credit is based on SIP provisions in Section 1.4.2, which considers the following:

- (a) A far-field background station is appropriate because the receiving water body (San Francisco Bay) is a very complex estuarine system with highly variable and seasonal upstream freshwater inflows and diurnal tidal saltwater inputs. The SIP allows background conditions to be determined on a discharge-by-discharge or water body-by-water body basis (SIP section 1.4.3). Consistent with the SIP, Regional Water Board staff chose to use a water body-by-water body basis due to inherent uncertainties in characterizing ambient background conditions in a complex estuarine system on a discharge-by-discharge basis.

The Yerba Buena Island RMP monitoring station, relative to other RMP stations, fits the guidance criteria of the SIP for establishing background conditions. The SIP requires that background water quality data be representative of the ambient receiving water that will mix with the discharge. Regional Water Board staff believes that water quality data from the Yerba Buena Island monitoring station are representative of the water that will mix with discharges from the Millbrae WPCP.

- (b) Because of the complex hydrology of San Francisco Bay, a mixing zone has not been established. There are uncertainties in accurately determining the mixing zones for each discharge. The models that have been used to predict dilution have not considered the three dimensional nature of the currents in the Estuary resulting from the interaction of tidal flushes and seasonal fresh water outflows. Being heavier and colder than fresh water, ocean salt water enters San Francisco Bay on diurnal tidal cycles, generally beneath the warmer fresh water which flows seaward during wet seasons. When these waters mix and interact, complex circulation patterns occur due to varying densities of the fresh and ocean waters. The complex patterns occur throughout the Estuary but are most prevalent in the San Pablo, Carquinez Strait, and Suisun Bay areas. The locations of this mixing and interaction change, depending on the strength of each tide and rate of delta outflow. Additionally, sediment loads to San Francisco Bay from the Central Valley change on a longer term basis, affecting the depth of different parts of San Francisco Bay and resulting in alteration of flow patterns and mixing and dilution that is achieved at an outfall.
- (c) The SIP allows limiting a mixing zone and dilution credit for persistent pollutants. Discharges to San Francisco Bay are defined by the SIP as incompletely mixed discharges; therefore, dilution credit should be determined using site specific information. Section 1.4.2.2 of the SIP specifies that the Regional Water Board shall "significantly limit a mixing zone and dilution credit as necessary to protect beneficial uses ... For example, in determining the extent of a mixing zone or dilution credit, the RWQCB shall consider the presence of pollutants in the discharge that are ... persistent." The SIP defines persistent pollutants as "substances for which degradation or decomposition in the environment is nonexistent or very slow." The pollutants at issue here are persistent pollutants (e.g., copper). Dilution studies that estimate actual dilution do not address the



effects of these persistent pollutants in San Francisco Bay environment, including long term effects on sediment concentrations.

- (3) For ammonia, a non-persistent pollutant, estimated actual initial dilution levels have been used to calculate the effluent limits. This is justified because ammonia is dispersed and degraded to a non-toxic state very rapidly. An engineering study on the actual dilution was performed by the Airfield Development Engineering Consultant on behalf of the NBSU and submitted on December 12, 2000. This was part of a larger study to estimate hydrodynamic impacts on San Francisco Bay by the once-proposed runway extension.

The discharge is pumped through a 60 inch pipe to a 654-foot diffuser section located approximately 5,200 feet offshore, at a depth 20 feet below mean lower low water, from Point San Bruno. The diffuser consists of 66 three-inch openings spaced 7 feet apart. At a point in the immediate vicinity of the diffuser, a 74:1 instantaneous dilution was calculated using the CORMIX model to estimate mixing of the effluent under tidal conditions. Dilution rates at other points were estimated. At a point approximately 1.5 km from the diffuser into the Bay (to the east), a dilution of 270:1 was estimated. In calculating the WQBELs (maximum daily and average monthly) the lowest dilution rate, i.e. 74:1 (or  $D = 73$ ), was used.

#### c. Calculation of Pollutant-Specific WQBELs

##### (1) Copper

- (a) *Copper WQC*. The chronic and acute marine WQC for copper from the Basin Plan and the CTR are 3.1 and 4.8 micrograms per liter ( $\mu\text{g/L}$ ), respectively, expressed as dissolved metal. Regional Water Board staff converted these WQC to total recoverable metal using the site-specific translators of 0.74 (chronic) and 0.88 (acute), as recommended by the Clean Estuary Partnership's (CEP's) *North of Dumbarton Bridge Copper and Nickel Development and Selection of Final Translators* (2005). The resulting chronic water quality criterion of 4.2  $\mu\text{g/L}$  and acute water quality criterion of 5.5  $\mu\text{g/L}$  were used to perform the RPA.
- (b) *RPA Results*. This Order establishes effluent limitations for copper because the MEC of 13  $\mu\text{g/L}$  exceeds the WQC for copper, demonstrating Reasonable Potential by Trigger 1.
- (c) *Copper WQBELs*. This Order includes two sets of WQBELs for copper. They are calculated based on the CTR's WQC, and the site-specific WQOs established in the Basin Plan Amendment, Regional Water Board Resolution R2-2007-0042, based on the *Copper Site-Specific Objectives in San Francisco Bay: Proposed Basin Plan Amendment and Draft Staff Report* (dated June 6, 2007). Both sets of criteria are expressed as total recoverable metal using the site-specific translators and water effects ratio (WER) of 2.4 recommended by the CEP. The following table compares effluent limitations for copper calculated according to SIP procedures (and a coefficient of variation of 0.27) using the two sets of criteria. The limitations take into account the deep water nature of the discharge and are therefore based on an initial dilution of 10 to 1.

**Table F-11. Effluent Limitations for Copper**

Effluent Limitations for Copper		
	AMEL	MDEL
Based on CTR Criteria	71 µg/L	100 µg/L
Based on SSOs (Alternate Limits)	53 µg/L	77 µg/L

- (d) *Immediate Compliance Feasible.* Statistical analysis of effluent data for copper, collected over the period of February 2004 through January 2007, shows that the 95<sup>th</sup> percentile (11 µg/L) is less than the AMEL based on CTR criteria (71 µg/L); the 99<sup>th</sup> percentile (12 µg/L) is less than the MDEL (100 µg/L); and the mean (7.4 µg/L) is less than the long term average of the projected normal distribution of the effluent data set after accounting for effluent variability (57 µg/L). The Regional Water Board therefore concludes that immediate compliance with these effluent limitations for copper is feasible. Although the alternate limits are lower than the final limits in this Order, compliance with the alternate limits would be feasible because the 95<sup>th</sup> percentile and 99<sup>th</sup> percentile of the effluent data set, respectively, are also lower than the alternate AMEL (53 µg/L) and MDEL (77 µg/L) based on the SSOs.
- (e) *Alternate Limitations for Copper.* As described in the Basin Plan Amendment, Regional Water Board Resolution R2-2007-0042, and the *Copper Site-Specific Objectives in San Francisco Bay: Proposed Basin Plan Amendment and Draft Staff Report*, the Regional Water Board proposes to develop site-specific criteria for copper in non-ocean, marine waters of the San Francisco Bay Region. Proposed SSOs for copper are 2.5 and 3.9 µg/L as four-day and one-hour average (i.e., chronic and acute) criteria, respectively. If these SSOs for copper become effective, the final effluent limitations, calculated according to Section 1.4 of the SIP and using a WER of 2.4, would be an AMEL of 53 µg/L and an MDEL of 77 µg/L.
- (f) *Antibacksliding.* Antibacksliding requirements are satisfied as Order No. 01-143 did not include final effluent limitations for copper. The alternate limits comply with anti-backsliding requirements because Lower San Francisco Bay is not impaired by copper and water quality would not be degraded (see Fact Sheet sections III.C.6 [Antidegradation Policy] and III.C.7 [Anti-Backsliding Requirements]).
- (2) Cyanide
- (a) *Cyanide WQC.* The most stringent applicable WQC criteria for cyanide are established by the Basin Plan for protection of aquatic life in San Francisco Bay. The Basin Plan establishes site-specific objectives of 9.4 µg/L (acute) and 2.9 µg/L (chronic).
- (b) *RPA Results.* This Order establishes effluent limitations for cyanide because the MEC of 17 µg/L exceeds the governing WQC of 2.9 µg/L, demonstrating Reasonable Potential by Trigger 1.

- (c) *Cyanide WQBELs*. WQBELs for cyanide, calculated according to SIP procedures using a CV of 0.73 based on the mean and standard deviation of the effluent data set, and using the site specific objectives of 9.4 µg/L (acute) and 2.9 µg/L (chronic), are an MDEL of 44 µg/L and an AMEL of 20 µg/L.
  - (d) *Immediate Compliance Feasible*. Statistical analysis of effluent cyanide data collected from February 2004 through January 2007 shows that the 95th percentile (11 µg/L) is less than the AMEL (20 µg/L); the 99th percentile (16 µg/L) is less than the MDEL (44 µg/L); and the mean (4.5 µg/L) is less than the long term average of the projected lognormal distribution of the effluent data set after accounting for effluent variability (12 µg/L). Based on this analysis, the Regional Water Board concludes that immediate compliance is feasible.
  - (e) *Antibacksliding*. Antibacksliding requirements are satisfied, as Order No. 01-143 did not include final effluent limitations for cyanide.
- (3) Dioxin-TEQ

- (a) *WQC*. 40 CFR 122.44(d) provides that, where Reasonable Potential exists for a pollutant that does not have a numeric water quality criterion or objective, such as for a narrative water quality objective, WQBELs may be established by using a calculated numeric water quality criterion supplemented with other relevant information. The dioxin-TEQ WQBELs in this Order are translated from the Basin Plan's narrative WQO for bioaccumulative substances using the CTR's numeric WQO for 2,3,7,8-tetrachlorinated dibenzo-p-dioxin (2,3,7,8-TCDD) and other relevant scientific information, including USEPA guidance, as described below.

The Basin Plan narrative WQO for bioaccumulative substances states:

*Many pollutants can accumulate on particulates, in sediments, or bioaccumulate in fish and other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered.*

Because it is the consensus of the scientific community that dioxins and furans associate with particulates, accumulate in sediments, and bioaccumulate in the fatty tissue of fish and other organisms, the Basin Plan's narrative bioaccumulation WQO is applicable to these pollutants. Elevated levels of dioxins and furans in fish tissue in San Francisco Bay demonstrate that the narrative bioaccumulation WQO is not being met. USEPA has therefore included Lower San Francisco Bay in the current 303(d) listing as impaired by dioxin and furan compounds.

The CTR establishes a numeric WQO for 2,3,7,8-TCDD of  $1.4 \times 10^{-8}$  µg/L for the protection of human health, when aquatic organisms are consumed. When the CTR was promulgated, USEPA stated its support of the regulation of other dioxin

and dioxin-like compounds through the use of toxicity equivalencies (TEQs) in NPDES permits. For California waters, USEPA stated specifically, "if the discharge of dioxin or dioxin-like compounds has reasonable potential to cause or contribute to a violation of a narrative criterion, numeric WQBELs for dioxin or dioxin-like compounds should be included in NPDES permits and should be expressed using a TEQ scheme." [65 Fed. Reg. 31682, 31695 (2000)] This procedure, developed by the World Health Organization (WHO) in 1998, uses a set of toxicity equivalency factors (TEFs) to convert the concentration of any congener of dioxin or furan into an equivalent concentration of 2,3,7,8-TCDD. USEPA also stated that the Agency would continue to assess the risks posed by dioxin to public health and the WQC for dioxin that it had promulgated.

To determine if the discharge of dioxin or dioxin-like compounds from the Millbrae WPCP has reasonable potential to cause or contribute to a violation of the Basin Plan's narrative bioaccumulation WQO, Regional Water Board staff used TEFs to express the measured concentrations of 16 dioxin congeners in effluent and background samples as 2,3,7,8-TCDD. These "equivalent" concentrations were then compared to the CTR numeric criterion for 2,3,7,8-TCDD ( $1.4 \times 10^{-8}$  µg/L). Although the 1998 WHO scheme includes TEFs for dioxin-like PCBs, they are not included in this Order's version of the TEF procedure. The CTR has established a specific water quality standard for dioxin-like PCBs, and they are included in the analysis of total PCBs.

- (b) *RPA Results.* This Order establishes effluent limitations for dioxin-TEQ because the MEC ( $8.3 \times 10^{-8}$  µg/L) exceeds the CTR numeric water quality criterion for 2,3,7,8-TCDD ( $1.4 \times 10^{-8}$  µg/L). The maximum observed ambient background dioxin-TEQ concentration in San Francisco Bay ( $7.1 \times 10^{-8}$  µg/L) also exceeds the CTR numeric water quality criterion for 2,3,7,8-TCDD.
- (c) *WQBELs.* WQBELs for dioxin-TEQ, calculated using SIP procedures as guidance using a CV of 0.60, are an AMEL of  $1.4 \times 10^{-8}$  µg/L and an MDEL of  $2.8 \times 10^{-8}$  µg/L. Because dioxin-TEQ is a bioaccumulative pollutant, these limitations are calculated without dilution credit.
- (d) *Immediate Compliance Infeasible.* The Discharger's Infeasibility Study asserts that the Millbrae WPCP cannot immediately comply with the WQBELs for dioxin-TEQ. Regional Water Board staff concurs because the MEC ( $8.3 \times 10^{-8}$  µg/L) is above the AMEL ( $1.4 \times 10^{-8}$  µg/L) and the MDEL ( $2.8 \times 10^{-8}$  µg/L).
- (e) *Interim Effluent Limitation.* Because Order 01-043 did not include a final effluent limitation for dioxin-TEQ and there is insufficient data to statistically determine a performance based interim limitation, no interim limit is proposed. Further, because the dioxin-TEQ limit implements the Basin Plan's narrative bioaccumulation WQO, it is not subject to the SIP's requirement for an interim limit. Instead, this Order requires further monitoring for dioxin-TEQ in effluent to support the development of a meaningful interim limitation in the future. This monitoring requirement will remain in effect for ten years following the effective

date of this Order or until the Regional Water Board adopts a limitation based on additional data.

- (f) *Antibacksliding*. Antibacksliding requirements are satisfied, as Order No. 01-143 did not include a final effluent limitation for dioxin-TEQ.

(4) Ammonia

- (a) *Ammonia WQC*. The Basin Plan contains WQOs for un-ionized ammonia of 0.025 milligrams per liter (mg/L) as an annual median, 0.16 mg/L as a maximum north of the Golden Gate Channel, and 0.4 mg/L as a maximum south of the Golden Gate Channel. Regional Water Board staff translated these WQOs from un-ionized ammonia concentrations to equivalent total ammonia concentrations (as nitrogen) since (1) sampling and laboratory methods are not available to analyze for un-ionized ammonia, and (2) the fraction of total ammonia that exists in the toxic un-ionized form depends on the pH, salinity and temperature of the receiving water. To translate the Basin Plan unionized ammonia objective, Regional Water Board staff used pH, salinity and temperature data from March 1993 to July 2001 from the Oyster Point RMP station (BB30), the nearest RMP station to the outfall. Regional Water Board staff used the following equations to determine the fraction of total ammonia in a discharge that would be converted to the toxic un-ionized form in estuarine and marine receiving waters (USEPA, 1989, Ambient Water Quality Criteria for Ammonia (Saltwater)—1989, EPA Publication No. 440/5-88-004):

$$\text{For salinity} > 10 \text{ ppt: fraction of } \text{NH}_3 = \frac{1}{1 + 10^{(pK - pH)}}$$

Where:

$$pK = 9.245 + 0.116(I) + 0.0324(298 - T) + \frac{0.0415(P)}{(T + 273)}$$

$$I = \text{the molal ionic strength of saltwater} = \frac{19.9273(S)}{(1,000 - 1.005109[S])}$$

S = Salinity (parts per thousand)

T = temperature in degrees Celsius

P = Pressure (one atmosphere)

Regional Water Board staff then used the 90<sup>th</sup> percentile and median un-ionized ammonia fractions to express the acute and chronic un-ionized ammonia WQOs, respectively, as total ammonia concentrations. Using the 90<sup>th</sup> percentile and median to express the acute and chronic un-ionized ammonia WQOs as equivalent total ammonia concentrations is consistent with USEPA guidance on translating dissolved metal WQOs to total recoverable metal WQOs (USEPA, 1996, *The Metals Translator: Guidance for Calculating a Total Recoverable Limit from a Dissolved Criterion*, EPA Publication Number 823-B-96-007). The equivalent total ammonia acute and chronic WQOs are 14.3 mg/L and 1.51 mg/L, respectively.

- (b) *RPA Results.* The SIP methodology was used to perform the RPA and to calculate effluent limitations. To set limitations for toxic pollutants, the Basin Plan (Section 4.5.5.2) indicates that WQBELs shall be calculated according to the SIP. Section 3.3.20 of the Basin Plan refers to ammonia as a toxic pollutant. Therefore, it is consistent with the Basin Plan to determine and establish effluent limitations for ammonia using SIP methodology. This Order establishes effluent limitations for total ammonia because the MEC of 59 mg/L exceeds the applicable WQO for this pollutant, demonstrating Reasonable Potential by Trigger 1.
- (c) *WQBELs.* The total ammonia WQBELs calculated according to SIP procedures are an MDEL of 160 mg/L and an AMEL of 110 mg/L. Regional Water Board staff made statistical adjustments because the Basin Plan's chronic WQO for un-ionized ammonia is based on an annual median, while chronic criteria are usually based on a 4-day average; also, the SIP assumes a monthly sampling frequency of 4 days per month to calculate effluent limitations based on chronic criteria. A 365-day average and a monitoring frequency of 30 days per month were used to calculate the total ammonia WQBELs. These statistical adjustments are supported by USEPA's *Water Quality Criteria; Notice of Availability; 1999 Update of Ambient Water Quality Criteria for Ammonia*, published on December 22, 1999, in the Federal Register.

Following SIP methodology as guidance, Regional Water Board staff used the maximum ambient background total ammonia concentration to calculate effluent limitations based on the acute criterion, and the median background total ammonia concentration to calculate effluent limitations based on the chronic criterion. Because the Basin Plan's chronic un-ionized ammonia objective is an annual median, the median background concentration is more representative of ambient conditions than a daily maximum.

- (d) *Immediate Compliance Feasible.* Statistical analysis of effluent data for total ammonia collected over the period of January 2002 through December 2006 shows that the 95<sup>th</sup> percentile (48 mg/L) is less than the AMEL (110 mg/L); the 99<sup>th</sup> percentile (54 mg/L) is less than the MDEL (160 mg/L); and the mean (38 mg/L) is less than the long-term average of the projected normal distribution of the effluent data set after accounting for effluent variability (69 mg/L). Therefore, the Regional Water Board concludes that immediate compliance with final effluent limitations for total ammonia is feasible.
- (e) *Antibacksliding.* Antibacksliding requirements are satisfied as the previous order did not include final effluent limitations for ammonia.

**e. Effluent Limit Calculations**

The following table shows the WQBEL calculations for copper, cyanide, dioxin-TEQ, and ammonia.

**Table F-12. Effluent Limit Calculations**

PRIORITY POLLUTANTS	Copper		Mercury	Cyanide	Dioxin TEQ	Total Ammonia
Units	ug/L		ug/L		ug/L	ug/L
	BP & CTR SW Aq Life	Alternate limits using SSOs (December 2004)	BP SW Aq Life	SSOs	Basin Plan HH	Basin Plan Aq. Life
Basis and Criteria type						
CTR Criteria -Acute	5.5	----	2.1	----	----	--
CTR Criteria -Chronic	4.2	----	0.025	----	----	--
SSO Criteria -Acute (December 2004) (Diss.)		3.9		9.4		
SSO Criteria -Chronic (December 2004) (Diss.)		2.5		2.9		
Water Effects ratio (WER)	2.4	2.4	1	1	1	1
Lowest WQO	4.2		0.025	2.9	1.4E-08	1505
Site Specific Translator - MDEL	0.88	0.88				
Site Specific Translator - AMEL	0.74	0.74				
Dilution Factor (D) (if applicable)	9	9	0	9	0	73
No. of samples per month	4	4	4	4	4	30
Aquatic life criteria analysis required? (Y/N)	Y	Y	Y	Y	N	Y
HH criteria analysis required? (Y/N)	N	N	Y	Y	Y	N
Applicable Acute WQO	13.09	10.64	2.1	9.4		14,296
Applicable Chronic WQO	10.05	8.11	0.025	2.9		1,505
HH criteria			0.05	220,000	1.40E-08	0
Background (Maximum Conc for Aquatic Life calc) <sup>[1]</sup>	2.55	2.55	0.0086	0.4	7.10E-08	100
Background (Average Conc for Human Health calc)			0.0022	0.4	5.00E-08	
Is the pollutant Bioaccumulative(Y/N)? (e.g., Hg)	N	N	Y	N	Y	N
ECA acute	108.0	83.4	2.1	90.4		1,050,604
ECA chronic	77.6	58.1	0.025	25.4		104,070
ECA HH			0.051	2199996.4	1.40E-08	
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	N	N	N	N	Y	N
Avg of effluent data points	7.4	7.4	0.0087	4.5		38
Std Dev of effluent data points	2.0	2.0	0.0052	3.2		7.4
CV calculated	0.27	0.27	0.60	0.73	N/A	0.20
CV (Selected) - Final	0.27	0.27	0.60	0.73	0.60	0.20
ECA acute mult99	0.55	0.55	0.320	0.27		0.65
ECA chronic mult99	0.73	0.73	0.526	0.47		0.98
LTA acute	59.82	46.22	0.672	24.56		681,047
LTA chronic	57.00	42.71	0.013	11.91		101,617
minimum of LTAs	57.00	42.71	0.013	11.91		101,617
AMEL mult95	1.24	1.24	1.55	1.68	1.55	1.06
MDEL mult99	1.80	1.80	3.12	3.68	3.11	1.54
AMEL (aq life)	70.70	52.97	0.02	19.98		107,719
MDEL(aq life)	102.88	77.08	0.04	43.83		156,758
MDEL/AMEL Multiplier	1.46	1.46	2.01	2.19	2.01	1.46
AMEL (human hlth)			0.051	2199996	1.4E-08	
MDEL (human hlth)			0.102	4826245	2.8E-08	
minimum of AMEL for Aq. life vs HH	71	53	0.020	20	1.4E-08	1.1E+05
minimum of MDEL for Aq. Life vs HH	103	77	0.041	44	2.8E-08	1.6E+05
Current limit in permit (30-day average)	17 (Interim)	17 (Interim)	0.087 (Interim)	10 (Interim)	1.4E-07 (Interim)	-----
Current limit in permit (daily)	-----	-----	-----	-----	-----	-----
Final limit - AMEL	71	53	0.020	20	1.4E-08	1.1E+05
Final limit - MDEL	100	77	0.041	44	2.8E-08	1.6E+05
Max Eff Conc (MEC)	13	13	0.028	17	8.3E-08	5.9E+04

[1] Median concentration used for ammonia.

## 5. Whole Effluent Acute Toxicity

The Basin Plan requires dischargers to either conduct flow-through effluent toxicity tests or perform static renewal bioassays (Chapter 4, Acute Toxicity) to measure the toxicity of wastewaters and to assess negative impacts upon water quality and beneficial uses caused by the aggregate toxic effect of the discharge of pollutants. This Order includes effluent limitations for whole effluent acute toxicity. Compliance evaluation for this Order is based on flow-through whole effluent toxicity tests, performed according to the USEPA-approved method in 40 CFR Part 136 (currently "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms, 5<sup>th</sup> Edition.")

If acute toxicity is observed in the future and the Discharger believes that it is due to ammonia toxicity, the Discharger must show this through a Toxicity Identification Evaluation (TIE) acceptable to the Executive Officer. If the Discharger demonstrates that toxicity exceeding the permit limit is caused by ammonia, and that the discharge is in compliance with the effluent limits, then such toxicity does not constitute a violation of the acute toxicity effluent limitation. If ammonia toxicity is verified in the TIE, the Discharger may utilize an adjustment protocol approved by the Executive Officer for the routine bioassay testing.

## 6. Whole Effluent Chronic Toxicity

This permit includes requirements for chronic toxicity monitoring based on the Basin Plan narrative toxicity objective and USEPA and State Water Board Task Force guidance. This permit includes the Basin Plan narrative toxicity objective as the applicable effluent limit, implemented via monitoring with numeric values as "triggers" to initiate accelerated monitoring and to initiate a chronic toxicity reduction evaluation (TRE) as necessary. The permit requirements for chronic toxicity are also consistent with the CTR and SIP requirements. Accelerated monitoring is required after exceeding a single-sample maximum of 10 TUC, consistent with Table 4-5 of the Basin Plan for dischargers monitoring chronic toxicity annually.

## 7. Chlorine

This Order retains the instantaneous maximum limitation for chlorine of 0.0 mg/L. This limitation is required by the Basin Plan (Table 4-2).

### Anti-Backsliding/Antidegradation.

a. **Effluent Limitations Retained from Order No. 01-143.** Limitations for the following parameters are retained and are unchanged from Order No. 01-143.

- Oil and grease
- pH
- CBOD<sub>5</sub> and TSS
- Total residual chlorine
- 85% removal requirement for CBOD and TSS
- Fecal coliform bacteria



- Acute toxicity

Retaining effluent limitations for these parameters in this Order ensures that these limitations are at least as stringent as those in Order No. 01-143, meeting applicable anti-backsliding requirements of the CWA. Retaining effluent limitations for these parameters also ensures that the existing receiving water quality will not be degraded (in terms of these parameters) as a result of this Order.

- b. New Effluent Limitations.** Final, concentration-based limitations for the following parameters were not contained in Order No. 01-143 and are established by this Order.

- Enterococcus bacteria
- Copper
- Cyanide
- Dioxin-TEQ
- Ammonia

The establishment of effluent limitations for dioxin-TEQ, ammonia, and enterococcus bacteria effectively creates limitations that are more stringent than in Order No. 01-143, therefore meeting applicable anti-backsliding requirements and ensuring that the existing quality of the receiving water will not be degraded (in terms of these parameters) as a result of this Order. The copper and cyanide effluent limits in this order are new final limits. Although these new limits are higher than the interim limits in Order No. 01-143, interim limits and final limits are not comparable for purposes of complying with antibacksliding requirements. These final limits also comply with antidegradation requirements.

- c. More Stringent Effluent Limitations.** No limitations established by Order No. 01-143 are made more stringent by this Order.

- d. Effluent Limitations Not Retained from Order No. 01-143.** Final limitations for the following parameters are not retained by this Order.

- Settleable matter
- Lead
- Nickel
- Zinc
- Tetrachloroethylene
- Bis(2-ethylhexyl)phthalate
- 4,4-DDE
- Dieldrin

This Order does not retain effluent limitations for settleable matter. For the Millbrae WPCP, like other facilities achieving secondary or more advanced levels of treatment, compliance with the requirements of 40 CFR 133 and of Table 4-2 of the Basin Plan will also assure removal of settleable solids to acceptably low levels - below 0.1 mL/L-hr (30-day average) and 0.2 mL/L-hr (daily maximum).

Order No. 01-143 included final effluent limitations for lead, nickel, zinc, tetrachloroethylene, bis(2-ethylhexyl)phthalate, 4,4-DDE and dieldrin; however, because the RPA showed that discharges from the Millbrae WPCP no longer demonstrate a reasonable potential to cause or contribute to exceedances of applicable water quality criteria for these pollutants, this Order does not retain these limitations from Order No. 01-143. Elimination of WQBELs for lead, nickel, zinc, tetrachloroethylene, bis(2-ethylhexyl)phthalate, 4,4-DDE and dieldrin is consistent with State Water Board Order WQ 2001-16.

#### **D. Interim Effluent Limitations**

The Discharger has shown the infeasibility of immediately complying with final limitations for dioxin-TEQ and has demonstrated that a compliance schedule for this constituent is justified based on the Discharger's source control and pollution minimization efforts in the past and continued efforts in the present and future.

1. **Feasibility Evaluation.** The Discharger submitted an infeasibility to comply report for Discharge Point E-001, dated May 23, 2008, for dioxin-TEQ (Infeasibility Report). The Infeasibility Report asserts that the Discharger cannot immediately comply with final WQBELs for dioxin-TEQ. Regional Water Board staff used the Discharger's self-monitoring data from June 2002 to November 2006 for dioxin-TEQ to confirm the Discharger's assertion of infeasibility.

With insufficient effluent data to determine the distribution of the effluent data set or to calculate a mean and standard deviation, and significant variability in the data, feasibility to comply with final effluent limitations is determined by comparing the MEC ( $8.3 \times 10^{-8}$  µg/L) to the AMEL ( $1.4 \times 10^{-8}$  µg/L) and the MDEL ( $2.8 \times 10^{-8}$  µg/L). Based on this comparison, the Regional Water Board concurs with the Discharger's assertion of infeasibility to comply with final WQBELs for dioxin-TEQ.

2. **Determination of Interim Effluent Limitations.** Because Order 01-043 did not include a final effluent limitation for dioxin-TEQ and there is insufficient data to statistically determine a performance based interim limitation, no interim limit is proposed. Further, because the dioxin-TEQ limit implements the Basin Plan's narrative bioaccumulation WQO, it is not subject to the SIP's requirement for an interim limit. Instead, this Order requires further monitoring for dioxin-TEQ in effluent to support the development of a meaningful interim limitation. This monitoring requirement will remain in effect for ten years following the effective date of this Order or until the Regional Water Board adopts a limitation based on additional data.

3. **Compliance Schedule**

- a. The SIP and the Basin Plan authorize compliance schedules in a permit if an existing Discharger cannot immediately comply with a new and more stringent water quality objective. Compliance schedules for limitations derived from CTR WQC are based on Section 2.2 of the SIP, and compliance schedules for limitations derived from Basin Plan narrative water quality objectives are based on the Basin Plan. Both the SIP and the

Basin Plan require the Discharger to demonstrate the infeasibility of achieving immediate compliance with the new limitation to qualify for a compliance schedule.

The SIP and Basin Plan require the following documentation to be submitted to the Regional Water Board to support a finding of infeasibility:

- Descriptions of diligent efforts the Discharger have made to quantify pollutant levels in the discharge, sources of the pollutant in the waste stream, and the results of those efforts.
- Descriptions of source control and/or pollutant minimization efforts currently under way or completed.
- A proposed schedule for additional or future source control measures, pollutant minimization, or waste treatment.
- A demonstration that the proposed schedule is as short as practicable.

The Basin Plan provides for a 10-year compliance schedule to implement measures to comply with new standards as of the effective date of those standards. Additionally, the provision authorizes compliance schedules for new interpretations of other existing standards if the new interpretation results in more stringent limitations.

- c. As previously described, the Discharger submitted an Infeasibility Report, and the Regional Water Board staff confirmed its assertions.
- d. A maximum compliance schedule is reasonable for dioxin-TEQ, because of the considerable uncertainty in determining effective measures (e.g., pollution prevention, treatment upgrades) that should be implemented to ensure compliance with final limitations. In the Regional Water Board's view, it is appropriate to allow the Discharger sufficient time to explore source control measures before requiring it to propose further actions, such as treatment plant upgrades, that are likely to be much more costly. This approach is supported by the Basin Plan (section 4.13), which states, "In general, it is often more economical to reduce overall pollutant loading into treatment systems than to install complex and expensive technology at the plant."

During the compliance schedule periods, the Regional Water Board may take appropriate enforcement actions if interim limitations and requirements are not met.

#### **E. Land Discharge Specifications**

Not Applicable.

#### **F. Reclamation Specifications**

Not applicable

## **V. RATIONALE FOR RECEIVING WATER LIMITATIONS**

Receiving water limitations are retained from Order No. 01-143 and reflect applicable water quality standards from the Basin Plan.

## **VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS**

The principal purposes of a monitoring program by a discharger are to:

- Document compliance with waste discharge requirements and prohibitions established by the Regional Water Board,
- Facilitate self-policing by the discharger in the prevention and abatement of pollution arising from waste discharge,
- Develop or assist in the development of limitations, discharge prohibitions, national standards of performance, pretreatment and toxicity standards, and other standards, and to
- Prepare water and wastewater quality inventories.

The MRP is a standard requirement in almost all NPDES permits issued by the Regional Water Board, including this Order. It contains definitions of terms, specifies general sampling and analytical protocols, and sets out requirements for reporting of spills, violations, and routine monitoring data in accordance with NPDES regulations, the CWC, and Regional Water Board's policies. The MRP also defines the sampling stations and frequency, the pollutants to be monitored, and additional reporting requirements. Pollutants to be monitored include all parameters for which effluent limitations are specified. Monitoring for additional constituents, for which no effluent limitations are established, is also required to provide data for future completion of RPAs for them.

### **A. Influent Monitoring**

Influent monitoring requirements for CBOD<sub>5</sub> and TSS allows determination of compliance with this Order's 85 percent removal requirement.

### **B. Effluent Monitoring**

The MRP retains most effluent monitoring requirements from the previous permit. Changes in effluent monitoring are summarized as follows.

- Monitoring for settleable matter is no longer required, as the effluent limitation for this parameter has not been retained by this Order.
- Routine effluent monitoring for copper, cyanide, and dioxin-TEQ (priority toxic pollutants with effluent limitations established by this Order) is required. Monitoring for all other priority toxic pollutants must be conducted in accordance with frequency and methods described in the August 6, 2001 Letter. Routine effluent monitoring for ammonia and enterococcus bacteria is also required.

- Monitoring for and compliance with final effluent chlorine residual requirements at E-002 is the City of South San Francisco's responsibility as part of their NBSU Outfall duties and authorities.

### **C. Bypasses or Sewer Overflow Monitoring**

Monitoring to record observations related to bypasses or sewer overflows is required by the Self-Monitoring Plan Part A (Attachment G).

### **D. Whole Effluent Toxicity Testing Requirements**

1. **Acute Toxicity.** Monthly 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity.
2. **Chronic Toxicity.** Chronic whole effluent toxicity testing is required annually in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

### **E. Receiving Water Monitoring**

On April 15, 1992, the Regional Water Board adopted Resolution No. 92-043 directing the Executive Officer to implement the RMP for San Francisco Bay. Subsequent to a public hearing and various meetings, Regional Water Board staff requested under authority of section 13267 of CWC that major permit holders in the San Francisco Bay region report on the water quality of the San Francisco Estuary. These permit holders responded to this request by participating in a collaborative effort through the San Francisco Estuary Institute known as the San Francisco Bay Regional Monitoring Program for Trace Substances, or RMP. This Order specifies that the Discharger shall continue to participate in the RMP, which involves collection of data on pollutants and toxicity in water, sediment, and biota of the estuary.

### **F. Other Monitoring Requirements**

Not applicable

## **VII. RATIONALE FOR PROVISIONS**

### **A. Standard Provisions (Provision VI.A)**

Standard Provisions, which in accordance with 40 CFR 122.41 and 122.42 apply to all NPDES discharges and must be included in every NPDES permit, are provided in Attachments D and G through H of this Order.

### **B. Monitoring and Reporting Requirements (Provision VI.B)**

The Discharger is required to monitor the permitted discharges in order to evaluate compliance with permit conditions. Monitoring requirements are contained in the MRP (Attachment E), Standard Provisions and SMP, Part A (Attachment G), of this Order. This provision requires compliance with these documents and is based on 40 CFR 122.63. The Standard Provisions and SMP, Part A, are standard requirements in almost all NPDES permits issued by the Regional Water Board, including this Order. They contain definitions of terms, specify general sampling and analytical protocols, and set out requirements for reporting of spills, violations, and routine monitoring data in

accordance with NPDES regulations, the CWC, and Regional Water Board's policies. The MRP contains a sampling program specific for the Millbrae WPCP. It defines the sampling stations and frequency, the pollutants to be monitored, and additional reporting requirements. Pollutants to be monitored include all parameters for which effluent limitations are specified. Monitoring for additional constituents, for which no effluent limitations are established, is also required to provide data for future completion of RPAs for them.

### **C. Special Provisions (Provision VI.C)**

#### **1. Reopener Provisions**

These provisions are based on 40 CFR 123 and allow modification of this Order and its effluent limitations as necessary in response to updated WQOs that may be established in the future.

#### **2. Special Studies and Additional Monitoring Requirements**

- a. Effluent Characterization Study. This Order does not include effluent limitations for the selected constituents addressed in the August 6, 2001 Letter that do not demonstrate Reasonable Potential, but this provision requires the Discharger to continue monitoring for these pollutants as described in the August 6, 2001 Letter and as specified in the MRP of this Order. If concentrations of these constituents increase significantly, the Discharger will be required to investigate the source of the increases and establish remedial measures if the increases result in reasonable potential to cause or contribute to an excursion above the applicable WQO/WQC. This provision is based on the Basin Plan and the SIP.
- b. Ambient Background Receiving Water Study. This provision is based on the Basin Plan, the SIP, and the August 6, 2001 Letter for priority pollutant monitoring. As indicated in this Order, this requirement may be met by participating in a collaborative BACWA study.
- c. Optional Mass Offset Plan: This option is provided to encourage the Discharger to further implement aggressive reduction of mass loads to Lower San Francisco Bay. If the Discharger wishes to pursue a mass offset program, a mass offset plan for reducing 303(d) listed pollutants to the same receiving water body needs to be submitted for Regional Water Board approval. The Regional Water Board will consider any proposed mass offset plan and amend this Order accordingly.

#### **3. Best Management Practices and Pollution Minimization Program**

This provision is based on Chapter 4 of the Basin Plan and Section 2.4.5 of the SIP.

#### **4. Construction, Operation, and Maintenance Specifications**

- a. Wastewater Facilities, Review and Evaluation, Status Reports: This provision is based on Order No. 01-143 and the Basin Plan. See Section VI.C.10 of this Order for specific requirements.

- b. Operations and Maintenance Manual, Review and Status Reports: This provision is based on the Basin Plan, the requirements of 40 CFR 122, and Order No. 01-143. See Section VI.C.10 of this Order for specific requirements.
- c. Contingency Plan, Review and Status Reports: This provision is based on the Basin Plan, the requirements of 40 CFR 122, and Order No. 01-143. See Section VI.C.10 of this Order for specific requirements.

#### **5. Special Provisions for Municipal Facilities (POTWs Only)**

- a. Sanitary Sewer Overflows and Sewer System Management Plan: This provision is to explain this Order's requirements as they relate to the Discharger's conveyance system, and to promote consistency with the State Water Board-adopted Statewide General Waste Discharge Requirements for Sanitary Sewer Overflow (SSO WDRs) and a related Monitoring and Reporting Program (Order No. 2006-0003-DWQ). The bases for these requirements are described elsewhere in this Fact Sheet. See Section VI.C.11 of this Order for specific requirements.

#### **6. Compliance Schedule**

The compliance schedule and the requirement to submit reports on further measures to reduce concentrations of dioxin-TEQ to ensure compliance with final limits are based on the Basin Plan Section 4.7.6. Because of the ubiquitous nature of the sources of dioxin-TEQ, this provision allows the Dischargers to address compliance with calculated WQBELs through other strategies such as mass offsets.

### **VIII. PUBLIC PARTICIPATION**

The San Francisco Bay Regional Water Board is considering the issuance of WDRs that will serve as an NPDES permit for City of Millbrae WPCP. As a step in the WDR adoption process, the Regional Water Board has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

#### **A. Notification of Interested Parties**

The Regional Water Board has notified the Dischargers and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through the **San Mateo County Times**.

#### **B. Written Comments**

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments must be submitted either in person or by mail to the Executive Office at the Regional Water Board at the address above on the cover page of this Order, Attention: John Madigan.

To be fully responded to by staff and considered by the Regional Water Board, written comments should be received at the Regional Water Board offices by 5:00 p.m. on **July 18, 2008**.

**C. Public Hearing**

The Regional Water Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: **August 13, 2008**  
Time: 9:00 am  
Location: Elihu Harris State Office Building  
1515 Clay Street, 1<sup>st</sup> Floor Auditorium  
Oakland, CA 94612

Contact: John Madigan, (510) 622-2405, email [jmadigan@waterboards.ca.gov](mailto:jmadigan@waterboards.ca.gov)

Interested persons are invited to attend. At the public hearing, the Regional Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our Web address is <http://www.waterboards.ca.gov/sanfranciscobay> where you can access the current agenda for changes in dates and locations.

**D. Waste Discharge Requirements Petitions**

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Regional Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Water Board's action to the following address:

State Water Resources Control Board  
Office of Chief Counsel  
P.O. Box 100, 1001 I Street  
Sacramento, CA 95812-0100

**E. Information and Copying**

The (ROWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., except from noon to 1:00 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling 510-622-2300.

**F. Register of Interested Persons**

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference the Millbrae WPCP, and provide a name, address, and phone number.

**G. Additional Information**

Requests for additional information or questions regarding this order should be directed to John Madigan at 510-622-2405 (e-mail at [JMadigan@waterboards.ca.gov](mailto:JMadigan@waterboards.ca.gov)).



**ATTACHMENT H - PRETREATMENT REQUIREMENTS****Pretreatment Program Provisions**

1. The Discharger shall implement all pretreatment requirements contained in 40 CFR 403, as amended. The Discharger shall be subject to enforcement actions, penalties, and fines as provided in the Clean Water Act (33 USC 1351 *et seq.*), as amended. The Discharger shall implement and enforce its Approved Pretreatment Program or modified Pretreatment Program as directed by the Board's Executive Officer or the EPA. The EPA and/or the State may initiate enforcement action against an industrial user for noncompliance with applicable standards and requirements as provided in the Clean Water Act.
2. The Discharger shall enforce the requirements promulgated under Sections 307(b), 307(c), 307(d) and 402(b) of the Clean Water Act. The Discharger shall cause industrial users subject to Federal Categorical Standards to achieve compliance no later than the date specified in those requirements or, in the case of a new industrial user, upon commencement of the discharge.
3. The Discharger shall perform the pretreatment functions as required in 40 CFR Part 403 and amendments or modifications thereto including, but not limited to:
  - i) Implement the necessary legal authorities to fully implement the pretreatment regulations as provided in 40 CFR 403.8(f)(1);
  - ii) Implement the programmatic functions as provided in 40 CFR 403.8(f)(2);
  - iii) Publish an annual list of industrial users in significant noncompliance as provided per 40 CFR 403.8(f)(2)(vii);
  - iv) Provide for the requisite funding and personnel to implement the pretreatment program as provided in 40 CFR 403.8(f)(3); and
  - v) Enforce the national pretreatment standards for prohibited discharges and categorical standards as provided in 40 CFR 403.5 and 403.6, respectively.
4. The Discharger shall submit annually a report to the EPA Region 9, the State Board and the Regional Water Board describing its pretreatment program activities over the previous twelve months. In the event that the Discharger is not in compliance with any conditions or requirements of the Pretreatment Program, the Discharger shall also include the reasons for noncompliance and a plan and schedule for achieving compliance. The report shall contain, but is not limited to, the information specified in Appendix A entitled, "Requirements for Pretreatment Annual Reports," which is made a part of this Order. The annual report is due on the last day of February each year.
5. The Discharger shall submit semiannual pretreatment reports to the EPA Region 9, the State Board and the Board describing the status of its significant industrial users (SIUs). The report shall contain, but not is limited to, the information specified in Appendix B entitled, "Requirements for Semiannual

Pretreatment Reports," which is made part of this Order. The semiannual reports are due July 31<sup>st</sup> (for the period January through June) and January 31<sup>st</sup> (for the period July through December) of each year. The Executive Officer may exempt a Discharger from the semiannual reporting requirements on a case by case basis subject to State Board and EPA's comment and approval.

6. The Discharger may combine the annual pretreatment report with the semiannual pretreatment report (for the July through December reporting period). The combined report shall contain all of the information requested in Appendices A and B and will be due on January 31<sup>st</sup> of each year.
7. The Discharger shall conduct the monitoring of its treatment plant's influent, effluent, and sludge as described in Appendix C entitled, "Requirements for Influent, Effluent and Sludge Monitoring," which is made part of this Order. The results of the sampling and analysis, along with a discussion of any trends, shall be submitted in the semiannual reports. A tabulation of the data shall be included in the annual pretreatment report. The Executive Officer may require more or less frequent monitoring on a case by case basis.

**APPENDIX A****REQUIREMENTS FOR PRETREATMENT ANNUAL REPORTS**

The Pretreatment Annual Report is due each year on the last day of February. [If the annual report is combined with the semiannual report (for the July through December period) the submittal deadline is January 31<sup>st</sup> of each year.] The purpose of the Annual Report is 1) to describe the status of the Publicly Owned Treatment Works (POTW) pretreatment program and 2) to report on the effectiveness of the program, as determined by comparing the results of the preceding year's program implementation. The report shall contain at a minimum, but is not limited to, the following information:

**1) Cover Sheet**

The cover sheet must contain the name(s) and National Pollutant Discharge Elimination System (NPDES) permit number(s) of those POTWs that are part of the Pretreatment Program. Additionally, the cover sheet must include: the name, address and telephone number of a pretreatment contact person; the period covered in the report; a statement of truthfulness; and the dated signature of a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for overall operation of the POTW (40 CFR 403.12(j)).

**2) Introduction**

The Introduction shall include any pertinent background information related to the Discharger, the POTW and/or the industrial user base of the area. Also, this section shall include an update on the status of any Pretreatment Compliance Inspection (PCI) tasks, Pretreatment Performance Evaluation tasks, Pretreatment Compliance Audit (PCA) tasks, Cleanup and Abatement Order (CAO) tasks, or other pretreatment-related enforcement actions required by the Regional Water Board or the EPA. A more specific discussion shall be included in the section entitled, "Program Changes."

**3) Definitions**

This section shall contain a list of key terms and their definitions that the Discharger uses to describe or characterize elements of its pretreatment program.

**4) Discussion of Upset, Interference and Pass Through**

This section shall include a discussion of Upset, Interference or Pass Through incidents, if any, at the POTW(s) that the Discharger knows of or suspects were caused by industrial discharges. Each incident shall be described, at a minimum, consisting of the following information:

- a) a description of what occurred;
- b) a description of what was done to identify the source;
- c) the name and address of the IU responsible
- d) the reason(s) why the incident occurred;
- e) a description of the corrective actions taken; and
- f) an examination of the local and federal discharge limits and requirements for the purposes of determining whether any additional limits or changes to existing requirements may be necessary to prevent other Upset, Interference or Pass Through incidents.

**5) Influent, Effluent and Sludge Monitoring Results**

This section shall provide a summary of the analytical results from the "Influent, Effluent and Sludge Monitoring" as specified in Appendix C. The results should be reported in a summary matrix that lists monthly influent and effluent metal results for the reporting year.

A graphical representation of the influent and effluent metal monitoring data for the past five years shall also be provided with a discussion of any trends.

**6) Inspection and Sampling Program**

This section shall contain at a minimum, but is not limited to, the following information:

- a) Inspections: the number of inspections performed for each type of IU; the criteria for determining the frequency of inspections; the inspection format procedures;
- b) Sampling Events: the number of sampling events performed for each type of IU; the criteria for determining the frequency of sampling; the chain of custody procedures.

**7) Enforcement Procedures**

This section shall provide information as to when the approved Enforcement Response Plan (ERP) had been formally adopted or last revised. In addition, the date the finalized ERP was submitted to the Regional Water Board shall also be given.

**8) Federal Categories**

This section shall contain a list of all of the federal categories that apply to the Discharger. The specific category shall be listed including the subpart and 40 CFR section that applies. The maximum and average limits for the each category shall be provided. This list shall indicate the number of Categorical Industrial Users (CIUs) per category and the CIUs that are being regulated pursuant to the category. The information and data used to determine the limits for those CIUs for which a combined waste stream formula is applied shall also be provided.

9) **Local Standards**

This section shall include a table presenting the local limits.

10) **Updated List of Regulated SIUs**

This section shall contain a complete and updated list of the Discharger's Significant Industrial Users (SIUs), including their names, addresses, and a brief description of the individual SIU's type of business. The list shall include all deletions and additions keyed to the list as submitted in the previous annual report. All deletions shall be briefly explained.

11) **Compliance Activities**

- a) **Inspection and Sampling Summary:** This section shall contain a summary of all the inspections and sampling activities conducted by the Discharger over the past year to gather information and data regarding the SIUs. The summary shall include:
- (1) the number of inspections and sampling events conducted for each SIU;
  - (2) the quarters in which these activities were conducted; and
  - (3) the compliance status of each SIU, delineated by quarter, and characterized using all applicable descriptions as given below:
    - (a) in consistent compliance;
    - (b) in inconsistent compliance;
    - (c) in significant noncompliance;
    - (d) on a compliance schedule to achieve compliance, (include the date final compliance is required);
    - (e) not in compliance and not on a compliance schedule;
    - (f) compliance status unknown, and why not.
- b) **Enforcement Summary:** This section shall contain a summary of the compliance and enforcement activities during the past year. The summary shall include the names of all the SIUs affected by the following actions:

- (1) Warning letters or notices of violations regarding SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.
- (2) Administrative Orders regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.
- (3) Civil actions regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.
- (4) Criminal actions regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.
- (5) Assessment of monetary penalties. Identify the amount of penalty in each case and reason for assessing the penalty.
- (6) Order to restrict/suspend discharge to the POTW.
- (7) Order to disconnect the discharge from entering the POTW.

#### 12) **Baseline Monitoring Report Update**

This section shall provide a list of CIUs that have been added to the pretreatment program since the last annual report. This list of new CIUs shall summarize the status of the respective Baseline Monitoring Reports (BMR). The BMR must contain all of the information specified in 40 CFR 403.12(b). For each of the new CIUs, the summary shall indicate when the BMR was due; when the CIU was notified by the POTW of this requirement; when the CIU submitted the report; and/or when the report is due.

#### 13) **Pretreatment Program Changes**

This section shall contain a description of any significant changes in the Pretreatment Program during the past year including, but not limited to: legal authority, local limits, monitoring/ inspection program and frequency, enforcement protocol, program's administrative structure, staffing level, resource requirements and funding mechanism. If the manager of the pretreatment program changes, a revised organizational chart shall be included. If any element(s) of the program is in the process of being modified, this intention shall also be indicated.

**14) Pretreatment Program Budget**

This section shall present the budget spent on the Pretreatment Program. The budget, either by the calendar or fiscal year, shall show the amounts spent on personnel, equipment, chemical analyses and any other appropriate categories. A brief discussion of the source(s) of funding shall be provided.

**15) Public Participation Summary**

This section shall include a copy of the public notice as required in 40 CFR 403.8(f)(2)(vii). If a notice was not published, the reason shall be stated.

**16) Sludge Storage and Disposal Practice**

This section shall have a description of how the treated sludge is stored and ultimately disposed. The sludge storage area, if one is used, shall be described in detail. Its location, a description of the containment features and the sludge handling procedures shall be included.

**17) PCS Data Entry Form**

The annual report shall include the PCS Data Entry Form. This form shall summarize the enforcement actions taken against SIUs in the past year. This form shall include the following information: the POTW name, NPDES Permit number, period covered by the report, the number of SIUs in significant noncompliance (SNC) that are on a pretreatment compliance schedule, the number of notices of violation and administrative orders issued against SIUs, the number of civil and criminal judicial actions against SIUs, the number of SIUs that have been published as a result of being in SNC, and the number of SIUs from which penalties have been collected.

**18) Other Subjects**

Other information related to the Pretreatment Program that does not fit into one of the above categories should be included in this section.

Signed copies of the reports shall be submitted to the Regional Administrator at USEPA, the State Water Resources Control Board and the Regional Water Board at the following addresses:

Regional Administrator  
United States Environmental Protection Agency  
Region 9, Mail Code: WTR-7

Clean Water Act Compliance Office

Water Division

75 Hawthorne Street

San Francisco, CA 94105

Pretreatment Program Manager

Regulatory Unit

State Water Resources Control Board

Division of Water Quality

1001 I Street

Sacramento, CA 95814

Pretreatment Coordinator

NPDES Permits Division

SF Bay Regional Water Quality Control Board

1515 Clay Street, Suite 1400

Oakland, CA 94612



**APPENDIX B:****REQUIREMENTS FOR SEMIANNUAL PRETREATMENT REPORTS**

The semiannual pretreatment reports are due on July 31<sup>st</sup> (for pretreatment program activities conducted from January through June) and January 31<sup>st</sup> (for pretreatment activities conducted from July through December) of each year, unless an exception has been granted by the Board's Executive Officer. The semiannual reports shall contain, at a minimum, but is not limited to, the following information:

**1) Influent, Effluent and Sludge Monitoring**

The influent, effluent and sludge monitoring results shall be included in the report. The analytical laboratory report shall also be included, with the QA/QC data validation provided upon request. A description of the sampling procedures and a discussion of the results shall be given. (Please see Appendix C for specific detailed requirements.) The contributing source(s) of the parameters that exceed NPDES limits shall be investigated and discussed. In addition, a brief discussion of the contributing source(s) of all organic compounds identified shall be provided.

The Discharger has the option to submit all monitoring results via an electronic reporting format approved by the Executive Officer. The procedures for submitting the data will be similar to the electronic submittal of the NPDES self-monitoring reports as outlined in the December 17, 1999 Regional Water Board letter, Official Implementation of Electronic Reporting System (ERS). The Discharger shall contact the Regional Water Board's ERS Project Manager for specific details in submitting the monitoring data.

If the monitoring results are submitted electronically, the analytical laboratory reports (along with the QA/QC data validation) should be kept at the Discharger's facility.

**2) Industrial User Compliance Status**

This section shall contain a list of all Significant Industrial Users (SIUs) that were not in consistent compliance with all pretreatment standards/limits or requirements for the reporting period. The compliance status for the previous reporting period shall also be included. Once the SIU has determined to be out of compliance, the SIU shall be included in the report until consistent compliance has been achieved. A brief description detailing the actions that the SIU undertook to come back into compliance shall be provided.

For each SIU on the list, the following information shall be provided:

- a. Indicate if the SIU is subject to Federal categorical standards; if so, specify the category including the subpart that applies.

- b. For SIUs subject to Federal Categorical Standards, indicate if the violation is of a categorical or local standard.
- c. Indicate the compliance status of the SIU for the two quarters of the reporting period.
- d. For violations/noncompliance occurring in the reporting period, provide (1) the date(s) of violation(s); (2) the parameters and corresponding concentrations exceeding the limits and the discharge limits for these parameters and (3) a brief summary of the noncompliant event(s) and the steps that are being taken to achieve compliance.

### 3) **POTW's Compliance with Pretreatment Program Requirements**

This section shall contain a discussion of the Discharger's compliance status with the Pretreatment Program Requirements as indicated in the latest Pretreatment Compliance Audit (PCA) Report, Pretreatment Compliance Inspection (PCI) Report or Pretreatment Performance Evaluation (PPE) Report. It shall contain a summary of the following information:

- a. Date of latest PCA, PCI or PPE and report.
- b. Date of the Discharger's response.
- c. List of unresolved issues.
- d. Plan and schedule for resolving the remaining issues.

The reports shall be signed by a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for the overall operation of the Publicly Owned Treatment Works (POTW)(40 CFR 403.12(j)). Signed copies of the reports shall be submitted to the Regional Administrator at USEPA, the State Water Resources Control Board and the Regional Water Board at the following addresses:

Regional Administrator  
United States Environmental Protection Agency  
Region 9, Mail Code: WTR-7  
Clean Water Act Compliance Office  
Water Division  
75 Hawthorne Street  
San Francisco, CA 94105

Pretreatment Program Manager  
Regulatory Unit  
State Water Resources Control Board  
Division of Water Quality  
1001 I Street  
Sacramento, CA 95814

Pretreatment Coordinator  
NPDES Permits Division  
SF Bay Regional Water Quality Control Board  
1515 Clay Street, Suite 1400  
Oakland, CA 94612

## APPENDIX C

### REQUIREMENTS FOR INFLUENT, EFFLUENT AND SLUDGE MONITORING

The Discharger shall conduct sampling of its treatment plant's influent, effluent and sludge at the frequency as shown in Table E-5 of the Self-Monitoring Program (SMP).

The monitoring and reporting requirements of the POTW's Pretreatment Program are in addition to those specified in Tables E-3 and E-4 of the SMP. Any subsequent modifications of the requirements specified in Tables E-3 and E-4 shall be adhered to and shall not affect the requirements described in this Appendix unless written notice from the Regional Water Board is received. When sampling periods coincide, one set of test results, reported separately, may be used for those parameters that are required to be monitored by both Table E-5 and the Pretreatment Program. The Pretreatment Program monitoring reports shall be sent to the Pretreatment Program Coordinator.

#### 1. Influent and Effluent Monitoring

The Discharger shall monitor for the parameters using the required test methods listed in Tables E-3 and E-4 of the SMP. Any test method substitutions must have received prior written Regional Water Board approval. Influent and Effluent sampling locations shall be the same as those sites specified in the Self-Monitoring Program.

The influent and effluent sampled should be taken during the same 24-hour period. All samples must be representative of daily operations. A grab sample shall be used for volatile organic compounds, cyanide and phenol. In addition, any samples for oil and grease, polychlorinated biphenyls, dioxins/furans, and polynuclear aromatic hydrocarbons shall be grab samples. For all other pollutants, 24-hour composite samples must be obtained through flow-proportioned composite sampling. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR Part 136 and amendments thereto. For effluent monitoring, the reporting limits for the individual parameters shall be at or below the minimum levels (MLs) as stated in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (2000) [also known as the State Implementation Policy (SIP)]; any revisions to the MLs shall be adhered to. If a parameter does not have a stated minimum level, then the Discharger shall conduct the analysis using the lowest commercially available and reasonably achievable detection levels.

The following standardized report format should be used for submittal of the influent and effluent monitoring report. A similar structured format may be used but will be subject to Regional Water Board approval. The monitoring reports shall be submitted with the Semiannual Reports.

- A. Sampling Procedures – This section shall include a brief discussion of the sample locations, collection times, how the sample was collected (i.e., direct collection using vials or bottles, or other types of collection using devices such as automatic samplers, buckets, or beakers), types of containers used, storage procedures and holding times. Include description of prechlorination and chlorination/dechlorination practices during the sampling periods.

- B. Method of Sampling Dechlorination – A brief description of the sample dechlorination method prior to analysis shall be provided.
- C. Sample Compositing – The manner in which samples are composited shall be described. If the compositing procedure is different from the test method specifications, a reason for the variation shall be provided.
- D. Data Validation – All quality assurance/quality control (QA/QC) methods to be used shall be discussed and summarized. These methods include, but are not limited to, spike samples, split samples, blanks and standards. Ways in which the QA/QC data will be used to qualify the analytical test results shall be identified. A certification statement shall be submitted with this discussion stating that the laboratory QA/QC validation data has been reviewed and has met the laboratory acceptance criteria. The QA/QC validation data shall be submitted to the Regional Water Board upon request.
- E. A tabulation of the test results shall be provided.
- F. Discussion of Results – The report shall include a complete discussion of the test results. If any pollutants are detected in sufficient concentration to upset, interfere or pass through plant operations, the type of pollutant(s) and potential source(s) shall be noted, along with a plan of action to control, eliminate, and/or monitor the pollutant(s). Any apparent generation and/or destruction of pollutants attributable to chlorination/dechlorination sampling and analysis practices shall be noted.

## 2. Sludge Monitoring

Sludge should be sampled in the same 24-hour period during which the influent and effluent are sampled except as noted in (C) below. The same parameters required for influent and effluent analysis shall be included in the sludge analysis. The sludge analyzed shall be a composite sample of the sludge for final disposal consisting of:

- A. Sludge lagoons – 20 grab samples collected at representative equidistant intervals (grid pattern) and composited as a single grab, or
- B. Dried stockpile – 20 grab samples collected at various representative locations and depths and composited as a single grab, or
- C. Dewatered sludge- daily composite of 4 representative grab samples each day for 5 days taken at equal intervals during the daily operating shift taken from a) the dewatering units or b) from each truckload, and shall be combined into a single 5-day composite.

The U.S. EPA manual, POTW Sludge Sampling and Analysis Guidance Document, August 1989, containing detailed sampling protocols specific to sludge is recommended as a guidance for sampling procedures. The U.S. EPA manual Analytical Methods of the National Sewage Sludge Survey, September 1990, containing detailed analytical protocols specific to sludge, is recommended as a guidance for analytical methods.

In determining if the sludge is a hazardous waste, the Dischargers shall adhere to Article 2, "Criteria for Identifying the Characteristics of Hazardous Waste," and Article 3, "Characteristics of Hazardous Waste," of Title 22, California Code of Regulations, Sections 66261.10 to 66261.24 and all amendments thereto.

Sludge monitoring reports shall be submitted with the appropriate Semiannual Report. The following standardized report format should be used for submittal of the report. A similarly structured form may be used but will be subject to Regional Water Board approval.

- A. Sampling procedures – Include sample locations, collection procedures, types of containers used, storage/refrigeration methods, compositing techniques and holding times. Enclose a map of sample locations if sludge lagoons or stockpiled sludge is sampled.
- B. Data Validation – All quality assurance/quality control (QA/QC) methods to be used shall be discussed and summarized. These methods include, but are not limited to, spike samples, split samples, blanks and standards. Ways in which the QA/QC data will be used to qualify the analytical test results shall be identified. A certification statement shall be submitted with this discussion stating that the laboratory QA/QC validation data has been reviewed and has met the laboratory acceptance criteria. The QA/QC validation data shall be submitted to the Regional Water Board upon request.
- C. Test Results – Tabulate the test results and include the percent solids.
- D. Discussion of Results – The report shall include a complete discussion of test results. If the detected pollutant(s) is reasonably deemed to have an adverse effect on sludge disposal, a plan of action to control, eliminate, and/or monitor the pollutant(s) and the known or potential source(s) shall be included. Any apparent generation and/or destruction of pollutants attributable to chlorination/ dechlorination sampling and analysis practices shall be noted.

The Discharger shall also provide any influent, effluent or sludge monitoring data for nonpriority pollutants that the permittee believes may be causing or contributing to Interference, Pass Through or adversely impacting sludge quality.